e-ISSN 2238-6912 | ISSN 2238-6262 | v.6, n.11, Jul./Dec. 2016 | p.116-131

LOGISTIC COMPLEXITY IN PEACEKEEPING OPERATIONS: A CHALLENGE

Mauro Cesar Barbosa Cid¹ Luiz Rogério Goldoni²

Introduction

The 21st century continued to see an increase in peacekeeping missions led by the United Nations Organization, both in quantity and complexity, a phenomenon that began after the fall of the Berlin Wall (Leslie 2012). Such increases directly affect the planning and management of peace operations.

In this context, logistics must adapt to the dynamic nature and political complexity of each operational scenario presented for peace operations. The determination of the logistical support for each mission depends on the origin and the responsibility of the support to the force spent; this, in turn, causes direct impacts on the operational actions demanded (Patriota 2009).

Logistical support is crucial to enabling civilians, military staff and the police force participating in Peacekeeping Operations (PKOs) to fully comply with the UN mandate. Such support is also fundamental to preserve the operational capacity and safety of civilians involved in the "theater of operations" (Neves 2009).

116

I PhD candidate at the Post-Graduate Program in Military Science, Brazilian Army Command and General-Staff School (ECEME). Specialist in Irregular Warfare (Special Forces Course, 2003) and in Command Actions (2002), Center for Special Operations Instruction of the Brazilian Army. He served as a Military Observer and Liaison Officer at the United Nations Operation in Cyprus (UNFICYP) between the years of 2012 and 2013 and contributed to the planning of sending Brazilian military personnel to the United Nations Interim Force in Lebanon (UNIFIL) in 2014. E-mail: maurocid@gmail.com

² Professor at the Post-Graduate Program in Military Science (PPGCM) of Meira Mattos Institute, Brazilian Army Command and General-Staff School (IMM/ECEME-Brazil). He is one of the editors of the Meira Mattos Collection (http://www.eceme.ensino.eb.br/meiramattos/index.php/RMM/index). E-mail: luizrfgoldoni@gmail.com

The objective of this work is to analyze the complexity of logistic support in the PKOs under UN's mandate. Initially, to achieve the proposed goal, a basic theoretical framework of logistics concepts in the UN peacekeeping environment will be presented. Following this line of thought, it will seek to raise the challenges that affect logistics in support of the PKOs. After that, it will be possible to analyze how the complexity of logistics affects the course of these operations.

The article will not seek solutions to the challenges posed, but will briefly address some options presented by the UN to solve these challenges.

Concepts and definitions

The concept of "peacekeeping" has been broadly defined in the "Agenda for Peace"³ document. According to the 1992 text, signed by the former Secretary-General of the United Nations, Boutros Boutros-Gali, "peacekeeping" would be the:

[...] deployment of the military, police and civilians in order to help in the implementation of agreements to cease hostilities. It is taken into effect with the consent of the parts involved in the conflict and is driven by the impartiality of its actions. International forces only make use of force in their own self-defense (Boutros-Ghali 1992).

The use of the military, police and civilians in PKOs is subject to a peace or ceasefire agreement. The deployment of peacekeeping forces is needed to guarantee the respect for the ceasefire and to provide the necessary environment for the negotiation of a peace agreement and to enable the presence of peacekeepers in the scene to ensure the implementation of the measures agreed upon by the belligerent parties (Neves 2009).

Still on the Agenda for Peace, Boutros-Ghali described the size increase, scope and complexity of UN peace missions and defined three types of missions linked to "peacekeeping": preventive diplomacy, the maintenance of peace and the pacification. In 1995, in another document, the "Supplement to an Agenda for Peace", additional terms such as peacekeeping, peace enforcement, and peacebuilding and disarmament were introduced, expanding even more the reach of nowadays missions carried out, fully or partially, by the UN.

Peacekeeping is one, among several activities, carried out by the Unit-

³ Document presented in 1992 with suggestions on how the UN could respond to violent conflicts.

ed Nations and other international actors to maintain peace and international security around the world. The United Nations Manual of Principles and Guidelines for Peacekeeping Operations (United Nations 2010a)⁴, also known as the "Capstone Doctrine", mention the importance of understanding how multiple concepts are related and also differ from each other. There are definitions of conflict prevention⁵, peacemaking⁶, peace enforcement⁷, peacebuilding⁸, and peacekeeping⁹. According to the "Capstone Doctrine", peacekeeping:

[...] is a technique designed to preserve the peace, however fragile, where fighting has been halted, and to assist in implementing agreements achieved by the peacemakers. Over the years, peacekeeping has evolved from a primarily military model of observing cease-fires and the separation of forces after inter-state wars, to incorporate a complex model of many elements – military, police and civilian – working together to help lay the foundations for sustainable peace (United Nations 2010a, 18).

According to Coleman (2014, 2), within a context of peacekeeping, logistics is "the science of planning and executing the movement and maintenance of staff and equipment in operations".

Logistics, in general, is influenced by several aspects that characterize the environment in which the support will be provided. The political complexity and dynamic nature of each operational scenario; the topographic geography and the climatic variations of theaters of operations; the number of countries involved and the large variation in operational and logistical stand-

⁴ The Manual in question was launched and approved in January 2008. This article uses the revised edition in January 2010.

^{5 &}quot;Conflict prevention involves the application of structural or diplomatic measures to keep intra-state or inter-state tensions and disputes from escalating into violent conflict" (United Nations 2010a, 17).

⁶ The peace process includes measures to solve ongoing conflicts and involves diplomatic action to establish a negotiated agreement between hostile parties (United Nations 2010a).

⁷ Peace enforcement involves the implementation, with the authorization of the United Nations Security Council, of a series of coercive measures including the use of military force for the restoration of international peace and security (United Nations 2010a).

⁸ Peacebuilding is a complex and long-term process. One of the components of this process is the analysis of the structural causes of violent conflicts. Peacebuilding measures seek to strengthen the capacity of the State to effectively and legitimately carry out its essential functions (United Nations 2010a).

⁹ Joint operations involve the coordinated use of elements of more than one singular force (land, naval and air) for interdependent or complementary purposes. Combined operations are those composed of elements of armed forces from more than one country.

ards and procedures; language and communication differences are aspects that have direct repercussions on how logistics will be planned and executed, and their analysis and study are important (Leslie 2012).

Still according to Leslie (2012), UN missions can range in size from a small group of observers to a major joint operation and/or combined with ground, air and naval troops involving thousands of civilians and military staff. Any logistics concept will have to be tailored to a specific mission taking into account the operational task, space and time, labor, material, environment, climate, infrastructure and available resources.

Referring to supporting large-scale missions, in November 1994, the UN General Assembly approved the establishment of a Permanent Logistics Base in Brindisi, Italy (United Nations 1994). The United Nations Logistics Base (UNLB) was initially a hub for supplies. The role of UNLB was expanded in 2002 to include the creation of a Strategic Deployment Stocks (SDS) concept. The SDS is the stock material of United Nations Peacekeeping Operations, which supports a rapid deployment and the initial operational capability of a complex peacekeeping mission. The UNLB warehouses provide air support for peace missions, as well as logistical training within the UN (Leslie 2012; Baig 2010).

The logistic support is focused on in-service and operational logistics, which, according to Coleman (2014), include:

- Acquisition, storage, distribution, maintenance and evacuation of the equipment and materials necessary for the functioning of the operations;
- Transport of staff into and out of the operation mission;
- Acquisition or construction, maintenance, operation and disposal of facilities including housing and warehouses;
- Acquisition or provision of services, such as food, cleaning, and postal services and
- Medical support.

Logistical Support in Peace Operations

The first step in logistics planning in a UN operation begins with the Department of Peacekeeping Operations (DPKO) through the Office of Mission Support, where the needs of Logistic Support for the troops are raised. The agency details guidelines and monitoring mechanisms for structures in the region of operations and seeks to promote efficient and effective management of resources throughout the mission (United Nations 2003).

A Memorandum of Understanding (MOU) is then established, consisting of an agreement between the contributing state and the UN. The MOU defines the type and level of support to be provided, as well as the responsibilities associated with each entity. The Handbook on United Nations Multidimensional Peacekeeping Operations (PKO) (UNITED NATIONS, 2003) explains that the Memorandum contains details on personnel, equipment and services, as well as the values that each contributing nation will receive for participation in the mission. In addition to this document, a Letters of Assist (LoA) may also be signed between the UN and the government of the contributing country for the supply of specific goods or services not included in the MOU. An alternative to logistical support is the Memorandum of Agreements (MoA), which is established between two or more nations, agreeing on the support provided from one nation to another (United Nations 2003).

All UN missions have in its composition a Chief Administrative Officer (CAO), who is responsible for all Administrative-Logistic support. The CAO is responsible for, among others, the following tasks: managing and controlling the human, material and financial resources of the mission; to advise the mission commander in the financial and budgetary areas and to implement an internal control and transparency system for the utilization of mission resources (United Nations 2003).

In contemporary peace operations, logistical support can be provided by states or by the UN itself. Regarding sources of logistical support, the "Logistical Support to United Nations Peacekeeping Operations" (Baig 2010), a manual, quotes the following types of logistical support:

- a) Logistical support provided by participating countries: a State can provide broad logistical support to its troops in every region of operation or in a specific area. Countries can also provide specific capabilities, such as physical (medical or engineering units) or management (for example, movement control).
- b) Logistical support provided by the international organization coordinating the operation: this type of support is based on the provision of materials such as tents, generators, vehicles and medical equipment. In addition to the material, the UN can help with logistics management through planning, shopping, movement control and supply chain management.
- c) Logistical support provided by the host nation: the host nation has a great importance in structuring the logistics in its territory. This support is closely linked to the permission and use of the country's logistical structures, both

for transportation purposes and for facilities and accommodation. The use of airspace, airports, roads and railways is of vital importance for the logistic and operational deployment of the troops in the state. Likewise, the host country could provide water and fuel supplies and services, such as medical and engineering. Local companies can be hired by the UN to provide needed support for the demands of troops in the country¹⁰.

- **d) Donors:** some States can contribute with heavy equipment, strategic or tactical transport and other types of logistical support. One example is Germany's Federal Relief Agency for Technical Relief which assisted in the construction of the housing facilities for the civilian staff of the Sudan peacekeeping mission (Marginean 2010).
- **e)** Contracted companies: In 2013, the UN expenses with contracts and purchases exceeded US\$ 2.4 billion. The companies contracted may be from the host nation or from the contributing country. One example was the hiring of DynCorps International to provide strategic transport for the mission in Somalia (Clemente 2014).

Critical Challenges for Logistical Support

Just as Peace Operations are highly complex, both because of multinational characteristics and because of the volatility and hostility of the operational environment, logistical support follows the same line of complexity in its planning and execution. According to Coleman (2014), three major challenges are posed for effective logistical support in peacekeeping missions: I) Difficulty of a fast logistical deployment; 2) Logistical Support, Procurement and Impacts for the host country; and, 3) The use of technologies to reduce logistical challenges. These challenges are analyzed subsequently.

¹⁰ Kress (2002) writes about the "three options for defense logistics": getting the necessary resources on the battlefield; carry the resources with the troop; send the resources from a distant area to be distributed among the troops on the battlefield. The author emphasizes that modern logistics should be based on a combination of the three options. The contemporary version of the first method "to get on the battlefield" differs from that practiced in the battles of antiquity in which the main resources used were water, food, animal fodder, stones and pieces of wood found in "operational theaters". "Looting and foraging, as a main source of sustainment, has been transformed into partial reliance on host nation's resources" (Kress 2002, 14), in situations of force projection and missions of peace.

Difficulty of a fast logistical deployment

One of the great challenges is the difficulty for a fast unfolding in the operational area. The initial phase of a peace operation is critical to the establishment of logistics. A large amount of personnel and material should be transported to the host country, where their arrival and all movement to the area of operations should be supported. The installation of a basic logistical support with the rental of buildings, infrastructure for camps, roads, airfields and warehouses, become particularly difficult in remote areas (Coleman 2014).

The speed of installation and unfolding is a central challenge. In the words of an UN official, "eventually we will always get what we need the problem is to get it fast" (Boutellis 2014).

The speed to launch an UN operation is closely linked to the precise assessment of the available host country support capacities. One solution to this problem is to increase "intermission" cooperation. Thus, experts already employed in other missions would be temporarily transferred to carry out the logistical assessments of the initial needs. In order to achieve this type of crossing, the new mission must bear all costs, which has created administrative problems with the Advisory Committee on Administrative and Budgetary Questions (ACABQ), which opposes the temporary redistribution of specialists (United Nations 2014e). Likewise, existing missions are reluctant to release their specialists, even temporarily, which, in addition to costs, can create problems in the operational capabilities of the mission that transfer the specialist (United Nations 2014a.).

In addition to the delay to receive the equipment, there is the problem of training the staff to use this material. Thus, intermission cooperation offers a partial solution: personnel and equipment with the appropriate capabilities already deployed on another mission could be transferred to a new operation to provide the necessary capabilities (United Nations 2014e). However, according to Coleman (2014), practical experiences have shown that there are limitations in the real potential of intermission cooperation. The sender missions lose combat power, which can often not be admitted given that missions work on fairly and reliably, based on persistent pressure on UN operations to "do more with less" and the economic difficulty of some important financial contributors.

¹¹ According to experts (Banomyong and Sodapang 2012; Beresford and Pettit 2012; Zeimpekins, Ichoua and Minis 2013; Sebbah et al. 2013) the first 72 hours are critical in a humanitarian aid operation following natural disasters.

The solution of using cooperation requires the consent of the contributing member state, which depending on its internal approval process, may take considerable time, which would make it impossible to logistically unfold in a timely term.

Another measure to try to increase the UN's logistical capacity is the creation of a list of logistics experts potentially available for a start-up mission, which would be responsible for carrying out a technical assessment and implementing a peace mission anywhere in the world. This list would include UN experts with logistics expertise who are retired or in other roles. These professionals would have the experience and capacity to analyze the environment and could present logistical solutions to a specific type of mission (Coleman 2014)¹².

Following the example of NATO, the UN began to gather information on the possibilities of logistical support in the host country. NATO facilitates planning logistics in advance of a crisis by encouraging members and partners to develop a "Capability Catalogue" (OTAN 2010). The suggestion, described by Coleman (2014), is that this process be initiated in regions that experience great instability, facilitating to the logistic component its rapid unfolding.

Another measure to speed up and facilitate the rapid use of logistic means is the hiring of private sector service companies at a global level with great mobility and logistical expertise. Because contracting is time-consuming, the prior agreements specify the delivery of particular assets or services to potential missions and can be activated when necessary to implement a mission or strengthen UN capacity. However, global system contracts are expensive and contractors may refuse to introduce (or increase rates) under particularly dangerous circumstances¹³. From a practical point of view, hiring the private sector has become a vital tool for national governments and international organizations in peacekeeping missions. The private sector is engaged in a broad spectrum of logistics activities, ranging from medical treatment to aircraft rental (Brooks and Mangan 2011), giving great flexibility and speed to the implementation of a peace mission.

¹² Many reserve soldiers act as logistical agents on peace missions. In addition to their experiences, these professionals contribute to bring together and settle disputes between the interactions of humanitarian organizations with military corporations (Balcik et al. 2010; Barber 2012; Heaslip and Barber 2013).

¹³ To avoid total reliance on third parties, the German Federal Relief Agency, for example, maintains a team specializing in the construction of peacekeeping camps. For more information, see: Bundesanstalt Technisches Hilfswerk, "Standing Engineering Capacity". Available at: www.thw.de/SharedDocs/ Einheiten / DE / Ausland / SEC.html? Nn = 2061858.

Boutellis (2014) asserts that there is no viable substitute for State's readiness to provide the critical logistical elements capable of maintaining large contingents during the early stages of a peacekeeping mission. The UN provides logistical support for operations, including commodities such as food rations, fuel and water, as well as vehicles and other equipment through its Strategic Deployment Stores located in its Logistics Bases¹⁴. Likewise, the UN assumes financial responsibility for the transportation of personnel and equipment to the area of operations and reimburses States in their costs of implementing the Contingent Owned Equipment. However, this does not replace the will of the state to keep its self-sustaining troops for an initial period of 90 days, until supply systems can establish themselves (Boutellis 2014).

According to Colemam (2014), the planning of UN logistical deployment starts from a premise that states do have the ability to provide their own equipment for the early phases of the mission. Deployment delays in the missions come from two factors: 1) the lack of capacity of the countries to provide the equipment and 2) the inability to carry out the self-support of the troops as promised in the initial agreements with the United Nations. This occurs because most peacekeepers come from developing countries, some of which do not have all the capacity required by the UN. These countries are reluctant to invest and acquire resources until the United Nations confirms the authorization for the mission, which leads to delays in the implementation and deployment of all the logistical means in the operational area.

In order to increase the readiness of the logistical units by providing incentives for States, the UN seeks to reimburse countries that contribute with specific capabilities that can directly reflect the rapid deployment of mission logistics (United Nations 2014c). This provides more targeted incentives that not only facilitate a rapid start-up of the mission, but also promote continued operational readiness on the part of contributing countries.

Coleman (2014) compares UN actions with NATO's ability to pressure Member States to deliver on commitments and engage in long-term logistics planning cycles to identify existing gaps that would, within multinational cooperation, enable the best logistic conditions of unfolding. In this comparison, the UN does not have the means to pressure States to develop their logistical capabilities within the current context of the Organization.

¹⁴ The UN Logistics Bases is comprised within the United Nations Global Assistance Center (UNGSC). The Bases are located in Brindisi (UNLB) and Valencia (UNSBV) and currently (February 2017) they provide logistical support for more than 37 peacekeeping missions.

Logistical Support, Procurement and Impacts for the host country

International organizations are aware that logistical support does not only support Peacekeeping personnel in the fulfillment of their mandate, but can directly impact mission objectives such as stabilization and economic reconstruction of the host country. According to Carnaham (2006), the decision of "where", "if" and "how" to build roads, airfields, wells, how to generate electricity and how to acquire supplies can have profound effects in an area of conflict. A 2010 UN report (United Nations 2010b) noted that Peace Operations spending has the potential to leverage the local economy and suggested increasing local procurement as the best way to positively impact the area of interest.

The UN's Global Field Support Strategy defines the full use of "investment in local and regional capabilities" as a mission objective (United Nations 2010b). An example is the Regional Service Center in Uganda that facilitates the hiring of local and regional businesses, facilitating and linking the local economy with UN procurement services.

The UN procurement system also recognizes that there are certain essential goods and services that are not available from the UN Headquarters and therefore lend themselves to local or regional procurement (United Nations 2013a). Coleman (2014) again puts NATO as an example, mentioning the increase on services and local acquisitions in Afghanistan.

However, there are two challenges for using contracts and local procurement. One is that member states have a strong political and economic interest in securing contracts for their domestic companies. This has led the UN system to focus on contracts and procurement from suppliers in developing or transition¹⁵ countries, not only in the host country.

The UN Procurement Division tracked the percentage of contracts in developing or transition countries. The conceptualization of these countries is very broad and makes it difficult to control and systematize, though. By 2013, contracts in this category totaled US\$ 1,67 billion (representing 69% of peacekeeping contracts), including US\$ 276 million in contracts with Russian companies, US\$ 313 million in suppliers in the United Arab Emirates and US\$ 72 million with Kuwaiti companies (United Nations 2013b). The UN Acquisition Division is seeking to separately control contracts taking into account the states' financial contribution capacity (Coleman 2014).

¹⁵ The term generally includes the countries of Central and Eastern Europe and the former Soviet Union that are emerging from a socialist-type economy to a market-based economy.

The second challenge is that not always the hiring of local suppliers is in the interest of the host nation. In regions where local resources (such as food and building materials) are scarce, contracts can deprive local populations of access to these basic needs. Even a simple drilling of an artesian well can be problematic if it interferes with irrigation systems, as it did with NATO in Afghanistan (Williams 2009) or as it did in northern Mali, by obstructing a fossilized source of water¹⁶.

In addition, local contractors can engage in practices that undermine the objectives of a peace operation. Clement (2009) points out, for example, that Taliban forces have benefited from local NATO-based contracts in Afghanistan.

According to Coleman (2014) to face this challenge, the UN has the benefit of a centralized procurement system. However, the "UN Procurement Manual" does not explicitly list the impact on the host country as one of its guiding principles; rather, it focuses on subjects like "best value for money", "justice, integrity and transparency", "effective international competition" and "the interest of the UN" (United Nations 2013a, §1.3.c).

Still according to Coleman (2014), the flexibility and the great challenge of this system consists in the determination of what really is the "best value for money." The manual above identifies "cost-free factors" that include supplier competence, the market environment, risk factors and the search for an "ethical, fair and transparent" supplier; which opens space for subjectivities and value judgments. Besides that, when the acquisition takes the form of a bidding with the solicitation of proposals where suppliers are invited, they are evaluated in a highly technical way, taking into account the financial part and the attendance of the needs of the contracted product or service. Member States have called on the UN to seek a better definition of the "best value for money" principle (United Nations 2013c). The questions include how this principle can affect suppliers in developing and transition countries, and whether or not more sustainable contracts should be encouraged (United Nations 2014d).

The use of technologies to reduce logistical challenges

Technology can be used to reduce challenges of logistical support. For example, it can facilitate the supply chain management by improving information on the movement of people, goods and services in the host country. Within the UN, electronic fuel management and inventory systems are un-

¹⁶ In geology, the underground water of an aquifer is called fossil water or paleowater.

der development and deployment (United Nations 2014c.). According to the Center News publication (2014), the UN has also developed the use of a Geographic Information System to find new sources of water for its missions and for the exploration of solar energy generation.

However, other technologies that could lessen logistics support challenges remain unexploited. For example, monitoring with equipment such as fixed cameras, aerial camera platforms (including unmanned aerial vehicles) and surveillance radars can complement the efforts of human monitoring (Dorn 2011). Its use would allow a greater concentration of personnel internally on bases from which patrols could be carried out, reducing the logistic demand.

The UN began using some of these technologies (including unmanned aerial vehicles) and could extend and standardize its use. It is reliable and facilitates contact with local suppliers of supply and services (United Nations 2013a). For local procurement, missions require information about suppliers' capabilities, and suppliers need information about mission requirements. In East Africa, services that provide market information through text messaging have been developed and are used by farmers to obtain information on product prices. At the same time, cell phones began to be used to receive and make payments. Technology can accelerate payment and help protect vulnerable suppliers (women, for example) against theft and corruption (Twonbei 2013).

In the long run, "3-D printing" will revolutionize some key aspects of logistical support. Existing technology already allows the printing of metal and plastic objects, opening up the possibility for highly skilled personnel in remote areas to print a wide variety of items ranging from spare parts to custom medical devices¹⁷.

For peace operations, 3-D printing can offer a great solution for the variety and diversification of equipment from the different countries that integrate a mission, simply by changing the design of the print. It is unlikely that this technology can replace conventional supply chains in the near future, but it can drastically reduce the need for an extensive stock of material. The 3-D printing can potentially provide a temporary solution, generating local capacity. This would create flexibility and capacity until that the supply chain could meet the demand (Sherman 2012).

The UN has convened a Panel of Experts on Technology and Innovation in Peacekeeping Missions under its responsibility. The Panel deliberations include considerations on technologies that facilitate logistical support.

¹⁷ Drushal (2010) analyzes the impact of technology on the logistics of the US Armed Forces, especially in the Navy.

In the longer term, however, a more permanent frame should be created within the UN Secretariat to monitor and evaluate technologies that can benefit peacekeeping operations within the logistical field (United Nations 2014b).

Final Considerations

The efficient logistical support is crucial to enable civilian, military and police officers deployed in peacekeeping operations to fulfill their mandates. The way this support is implemented impacts both host and donor countries.

In peace operations, the logistical support emanates from a variety of sources, including the deployed contingent self-sufficiency capabilities, logistical capacity of contributing States, international organizations involved in coordination and the host nation, business enterprises and donors.

Logistical support seeks to improve its procedures by supporting a fast implementation of a mission, optimizing the impact of the provision to the host country, and incorporating new technologies so that peace operations do not suffer a disruption solution and, instead, have their mandates fulfilled.

REFERENCES

- Aguilar, Sergio Luiz Cruz. 2015. "A Participação do Brasil nas Operações de Paz: passado, presente e futuro". Brasiliana Journal for Brazilian Studies 3 (2): 113-141.
- Baig, Kamran. 2010. Logistical Support to United Nations Peacekeeping Operations: An introduction. Williamsburg: Peace Operations Training Institute.
- Balcik, Barcu, Benita Beamon, Caroline Krejci, Kyle Muramatsu, and Magaly Ramirez. 2010. "Coordination in humanitarian relief chains: Practices, challenges and opportunities". International Journal of Production Economics 126: 22-34.
- Banomyong, Ruth, and Apichat Sodapang. 2012. "Relief Supply Chain Planning: Insights from Thailand". In Relief Supply Chain Management for Disasters: Humanitarian Aid and Emergency Logistics. Hershey: Business Science Reference.
- Barber, Elizabeth. 2012. "Military Involvement in Humanitarian Supply Chain". In Relief Supply Chain Management for Disasters: Humanitarian Aid and Emergency Logistics. Hershey: Business Science Reference.

- Beresford, Anthony, and Stephen Pettit. 2012. "Humanitarian Aid Logistics: The Wenchuan and Haiti Earthquakes Compared". In: Relief Supply Chain Management for Disasters: Humanitarian Aid and Emergency Logistics. Hershey: Business Science Reference.
- Boutellis, Arthur E Adam C. Smith. 2014. Engineering Peace: The Critical Role of Engineers in UN Peacekeeping. New York: International Peace Institute.
- Boutros-Ghali, Boutros. 1992. An Agenda for Peace: Preventive Diplomacy, Peacemaking and Peace-keeping. United Nations official document A/47/277 S/241111, 17 June 1992. New York: Department of Public Information.
- _____. 1996. ONU: Uma Agenda para o Desenvolvimento. Palestra proferida em fevereiro de 1996. São Paulo: IEA-USP. http://www.iea.usp.br/iea/artigos/boutros-ghalionu.pdf.
- Brooks, Doug, and Fiona Mangan. 2011. "Modern Use of Contractors in Peace and Stability Operations". Brown Journal of World Affairs XVIII (I): 163-176.
- Carnahan, Michael, William Durch, and Scott Gilmore. 2006. *Economic Impact of Peacekeeping*. New York: Peace Dividend Trust for the Peacekeeping Best Practices Section, UN Department of Peacekeeping Operations.
- Clemente, Dave, and Ryan Evans. 2014. "Wartime Logistics in Afghanistan and Beyond". Chatham House Report. January. https://www.chathamhouse.org/sites/files/chathamhouse/home/chatham/public_html/sites/default/files/afghanistan_clemente.pdf.
- Coleman, Katharina. 2014. *Political Economy of UN Peacekeeping*. New York: International Peace Institute.
- ______. 2014. "Overcoming Logistics Dificulties in Complex Peace Operations in Remote Areas". Challenges Forum. October 14-16, Beijing, China.
- Dorn, Walter. 2011. Keeping Watch: Monitoring Technology and Innovation in UN Peace Operations. Tokyo: United Nations University Press.
- Drushal, Jon, and Michael Llenza. 2012. "3-D Printing revolution in Military Logistics". Atlantic Council. November 20. http://www.atlanticcouncil. org/blogs/new-atlanticist/3d-printing-revolution-in-military-logistics.
- Heaslip, Graham, and Elizabeth Barber. 2014. "Using the military in disaster relief: systemising challenges and opportunities". Journal of Humanitarian Logistics and Supply Chain Management 4 (1): 60-81.
- Kress, Moshe. 2002. Operational Logistics: The Art and Science of Sustaining

- Military Operations. New York: Springer Science; Business Media New York.
- Leslie, Don. 2012. *Operational logistical support of UN peacekeeping missions*. UN: Peace Operations Training Institute.
- Marginean, Valentin. 2014. Host Nation Support during operations and exercises. NATO Logistic Branch, SHAPE.
- Martins Filho, Elias Rodrigues e Eduardo Uziel. 2015. "As operações de manutenção da paz e o Secretariado das Nações Unidas". Política Externa 24 (1).
- Neves, Gilda. 2009. Comissão das Nações Unidas para Consolidação da Paz: perspectiva brasileira. Brasília: FUNAG.
- OTAN. 2010. "Afghan First Policy". NATO. April 23. http://www.nato.int/cps/en/natolive/official_texts_62851.htm.
- Patriota, Antonio de Aguiar. 1998. O Conselho de Segurança após a Guerra do Golfo: a Articulação de um Novo Paradigma de Segurança Coletiva. Brasília: FUNAG.
- Sebbah, Samir, Abdeslem Boukhtouta, Jean Berger, and Ahmed Ghanmi. 2013. "Military Logistics Planning in Humanitarian Relief Operations". In Humanitarian and Relief Logistics: Research Issues, Case Studies and Future Trends. New York: Springer.
- Sherman, Jake, Alischa Kugel, and Andrew Sinclair. 2012. "Overcoming Helicopter Force Generation Challenges for UN Peacekeeping Operations". International Peacekeeping 19 (1): 77-92.
- Twombey, Matt. 2013. "Cashless Africa: Kenya's smash success with mobile money". CNBC. November 11. http://www.cnbc.com/2013/11/11/cashless-africa-kenyas-smash-success-with-mobile-money.html.
- United Nations. 1994. Resolutions and Decisions adopted by the General Assembly during its 49th session: GAOR, 49th Session, Supplement No. 49. http://research.un.org/en/docs/ga/quick/regular/49.
- ______. 2003. Handbook on United Nations Multidimensional Peacekeeping Operations (PKO). New York: Department of Peacekeeping Operations.
- ______. 2010a. United Nations Peacekeeping Operations: Principles and Guide-lines. New York: Department of Peacekeeping Operations.
- _____. 2010b. Global Field Support Strategy. A/64/633. January 26.
- _____. 2013a. United Nations Procurement Manual. July 1.
- ______. 2013b. *United Nations Procurement Division statistics*. http://www.un.org/Depts/ptd/procurement-bycountry-table-detail/2013.

	. ~
2014a. Overview of the Financing of the United Nation Operations. A/68/731. January 31.	s Peacekeeping
2014b. USGs Announce Expert Panel on Technology and UN Peace- keeping. Press release. June 4.	l Innovation in
2014c. United Nations Secretary-General, Results of the restablish the standard rate of reimbursement for troop-contries. A/68/813, §66. March 26.	-
2014d. General Assembly. Resolution 68/263. April 28.	
2014e. United Nations ACABQ. Observations and recomcross-cutting issues related to peacekeeping operations. A/68	

- Williams, David B. 2009. "Finding water in the heart of darkness: Afghanistan's ongoing water challenges". EARTH Magazine. July. https://www.earth-magazine.org/article/finding-water-heart-darkness-afghanistans-ongoing-water-challenges.
- Zeimpekins, Vasileios, Soumia Ichoua, and Ioannis Minis. 2013. "Humanitarian Logistics: An Opportunity for Research in Operations to Save Lives and Limit the Effects of Devastation". In Humanitarian and Relief Logistics: Research Issues, Case Studies and Future Trends. New York: Springer.

ABSTRACT

The increase in the number and in the complexity of the UN Peacekeeping missions led to challenges in logistics implementation and operationalization. This study aims to understand and investigate the complexity of the logistical support in UN Peacekeeping operations missions and its implications and consequences.

KEYWORDS

Logistics; Supply Chain; Complexity; UN Peacekeeping Mission.

Received on March 29, 2017. Approved on July 25, 2017.

Translated by Marina Felisberti